

BARRIERS AND FACILITATORS TO ORGANIZED PHYSICAL ACTIVITY IN SUMMER
CAMPERS

by

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(Under the Direction of Silvia Giraud)

ABSTRACT

This study was conducted to identify and evaluate barriers and facilitators to participation in organized physical among summer campers. The investigation uses narrative inquiry approach triangulated with observations, interviews, and open-ended surveys. Systematic observations and semi-structured interviews were collected during daily, organized recreation during the summer session at 4-H Summer Camp Rock Eagle. Data was analyzed thematically using the constant comparative method. Emerging trends included the effects of physical factors, personal interaction, and familial experience on campers' participation in physical activity.

INDEX WORDS: 4-H Club, Summer Camp, Qualitative, Organized Physical Activity

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CAMPERS

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BS, University of Georgia, 2016

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CHAPTER 1

STATEMENT OF THE PURPOSE

Introduction

As the national rate of overweight and obese children has risen to 31.3%, Georgia's childhood overweight and obesity rate has climbed to 35% [1]. Children's increased reliance on technology for transportation and entertainment is causing a dramatic increase in sedentary time and this time spent sitting or in front of a screen prevents children from reaping the benefits of physical activity. Instead of lowering fat mass and improving overall body composition, these children are establishing habits that can be harmful to their health later in life [2]. The Department of Health and Human Services recommends children ages 6-17 engage in at least 60 minutes of moderate to vigorous physical activity each day [3]; however, only 42% of children ages 6-11 and adolescents meet this daily recommendation [4].

About 95% of children are spending at least six hours a day in school, but for about two months each year, summer vacation may take away a child's structured sleep, activity, and school, and extracurricular activity schedules. This lack of structure may help explain why children's BMI increases at a faster rate over the summer months than it does during the academic year. Summer months, therefore, offer a unique opportunity to encourage children's physical activity and summer camps may offer the optimal setting to add structure and discourage obesogenic activities. Each summer, 4-H camps across the country seek to teach children foundational skills in leadership, nutrition, conservation, and physical activity while providing the structure found in school in a comfortable, high-energy environment. Camp Rock

Eagle, in Eatonton, Georgia, serves as an example of a summer camp that utilizes hands-on opportunities to foster learning while being physically active and many of these learning experiences take the form of organized activities and games. These activities can be an opportunity to teach the campers that being active does not just have to mean going to the gym or lifting weights.

These games are tailored to the age and interests of the campers, but there are still several children who choose to not participate. Currently, there is minimal research investigating barriers to physical activity among youth, especially within the camp setting. Without this understanding, Camp Rock Eagle may not be able to further adapt the setting and activities to suit these inactive children and encourage participation. The purpose of this study is to understand campers' experience with organized physical activity. Specifically: How do campers decide whether or not to participate in organized physical activity? What are the barriers and facilitators to participation in organized physical activity?

Purpose

The proposed study seeks to utilize a narrative inquiry approach to understand and construct meaning of the facilitators and barriers that influence a camper's to sit out of organized physical activity. The qualitative design will allow campers the freedom to tell their stories and opinions without restricting them to predetermined responses on a survey. These findings will be used to construct meaning of the experience of setting out in addition to uncovering previously unconsidered factors that may serve as barriers to physical activity.

Significance of Research on Childhood Inactivity

This research is significant because identifying barriers to physical activity such as limited previous activity experience or family habits can inform summer camps on how to adapt

programs to foster participation. This study aims to assist researchers in identifying and understanding underlying factors that contribute to childhood inactivity and obesity.

Understanding these factors will allow for better prevention and treatment strategies, specifically at Camp Rock Eagle.

Innovation of Research on Childhood Inactivity

Previous studies have sought to classify activity levels by demographics such as race and gender relying on primarily quantitative methods. The qualitative methods used in this study aim to give the participants the autonomy to formulate their own thoughts and ideas without being restricted to a pre-determined list or simply through objective measures. This study seeks to express the campers' perspective and gain a more comprehensive view of what factors influences camper's choice to not participate in camp activities. This innovative approach aims to build upon previous research by uncovering barriers to organized physical activity among adolescents beyond previously identified factors such as socioeconomic status and race and seeks to answer the question: What influences a camper's likelihood to participate in organized physical activity?

Overall Hypothesis

It is hypothesized that children's willingness to participate in organized activity is influenced by the camp setting, prior experience with organized activity, and home life. It is also hypothesized that the study will expose common themes among children regarding organized activity.

Assumptions

Prior research exposed socioeconomic status' correlation with low activity levels, which contributed to the formulation of interview questions. Rock Eagle campers come from a variety of socioeconomic situations and provide an optimal setting to investigate this proposition.

Special consideration was also paid to the wide variety of physical education programs and varied built environment factors in Georgia counties. These were assumed to be likely contributors to children's attitudes and beliefs about physical activity, and ultimately influence their choice to participate in organized physical activity.

Limitations

Interview data was limited to the information the participant was willing to share. This information was likely influenced by the camper's personality and perceived rapport established between the interviewer and participant. Sample selection was limited by parents' willingness to give consent as well as the selection of counties with residents that regularly attend Camp Rock Eagle. This selection is only representative of a limited number of races, ages, personalities, and socioeconomic statuses, which may not have the potential to be widely extrapolated. Finally, the study only took place at Camp Rock Eagle, and may therefore not be generalized to other camps in the state or country.

Expected Outcomes

It is expected that children choose not to participate in organized physical activity for a variety of reasons and will attribute their unwillingness to factors including weather, personal preference, or exhaustion. This study aims to uncover and understand previously unconsidered factors that influence participation in organized activity.

CHAPTER 2

LITERATURE REVIEW

Introduction

Obesity impacts all populations across the United States and now threatens the health of 31% the country's children. In the state of Georgia alone, 35% of children are classified as overweight or obese [1]. Childhood inactivity has only worsened these rates as recent advances in technology and transportation promote less active lifestyles and an overall increase in sedentary time [5]. Children are enamored with devices and now spend a great deal of time in front of screens causing their daily activity time to suffer as a result [6]. This low activity lifestyle is only worsened by faster modes of transportation such as cars and buses that require much less energy expenditure than walking, running, or biking [5]. As children are more accustomed to these sedentary lifestyle behaviors, they are at a high risk of becoming obese while missing the benefits of physical activity such as controlling Body Mass Index (BMI) [7], and protecting against all-cause mortality risk [8].

Childhood Inactivity

Activity levels tend to decrease as children get older, so it is especially important to intervene early and encourage an active lifestyle, even from a young age [4]. Organized activity can be an effective way to increase physical activity levels but there are many barriers that stand in the way of children engaging in adequate levels of active time. A cross sectional study by Singh, Kogan, Siapush, and van Dyck [9] identified common barriers to physical activity as low neighborhood safety, frequent screen time, and physically inactive parents. They found

especially high levels of inactivity among females, older children, minority groups, non-English speakers, children in metropolitan areas, and children in single parent households [9]. These barriers may increase risk of inactivity, but do not destine a child to become obese. Although these barriers have been associated with inactivity, research is needed to investigate whether these trends are evident at summer camps in Georgia. Physical activity interventions and behavior modifications may offer promise to help overcome these barriers and set children up for positive health outcomes later in life.

Obesity and Inactivity

The subject of childhood obesity and inactivity is pressing. Currently, 35% of children in the state of Georgia are overweight or obese [1]. Physical activity in children can combat obesity by lowering fat mass and improving body composition [2]. Activity levels tend to decline as children age, so it is especially important to intervene early and establish healthy habits in the Georgian youth [4]. Only 21.6% of children ages 6-19 [6] meet the daily physical activity recommendation of at least 60 minutes of moderate to vigorous physical activity at least 5 days a week [3]. Although the recommendation suggests moderate to vigorous activity, some evidence suggests that overall physical activity including light intensity activity can result in overall health benefits [10]. However, most children and families overestimate activity on self-reports, so childhood inactivity levels may be even higher than predicted [4].

Social-ecological Model

School-aged children are vulnerable to their environment and their parents dictate many of their daily decisions. This phenomenon demonstrates the social-ecological theory, which is based on the principle that individuals are responsible for their choices, but external and environmental factors have a large impact on behavior [11]. These influences are comprised of

several different fields including culture, politics, environment, organizational, psychological, and biological [12]. This theory not only raises our awareness for the possible negative influences on a child's decision making, but also offers hope for positive results from a behavioral intervention. Without intervention or training in positive health behaviors, these children may easily adopt negative habits modeled by their parents, guardians, or other adults around them. A physical activity intervention for children should aim to address the cultural, environmental, organizational, and psychological factors that contribute to this model by introducing new, healthful, sustainable behaviors the children may be able to carry throughout the course of their lives despite the ways in which caregivers dictate children's lives.

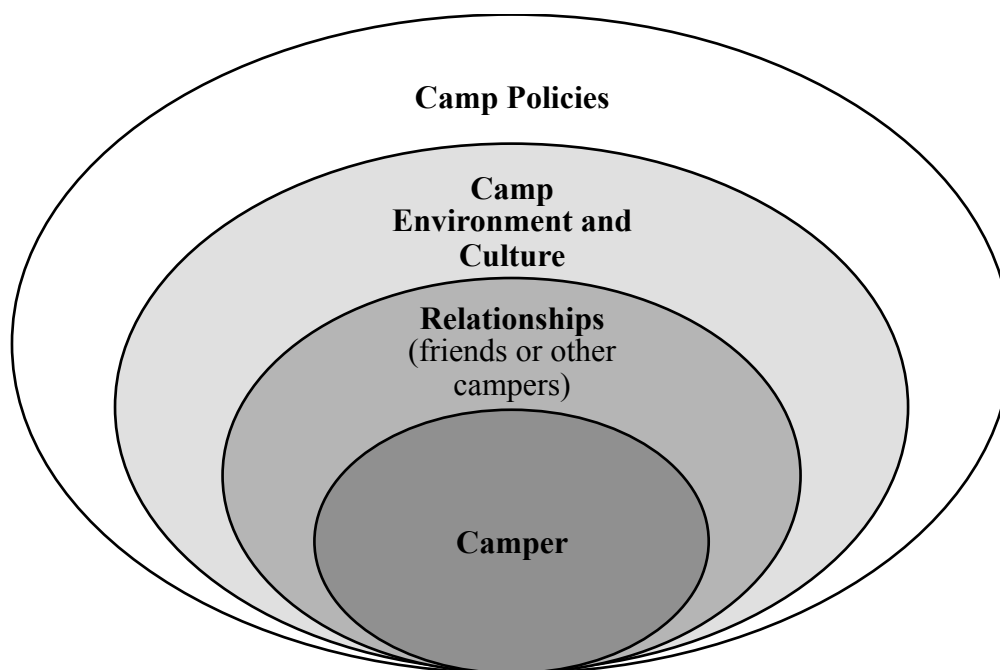


Figure 1. *Social Ecological Model in the Camp Setting. Adapted from [13].*

Summer School Holiday

During the academic year, 95% of children spend at least six hours in school every day [14]. These schools can bring structure to a child's life, often with the added benefit of scheduled physical education or recess time. During the summer months, children are likely out of school and may lose the structure that the academic year offered [15]. The majority of schools in the United States engage in 8-14 weeks of vacation time during the summer [16]. This vulnerable time period offers both a challenge due to increased free time potentially filled by obesogenic behavior; however, it also offers an optimal opportunity for intervention since most children are out of school. BMI increases at a much faster rate during the summer months than during the school year, especially for African American, Hispanic, or overweight children [15]. This dramatic increase may be due to less structured activity during the summer, less healthy eating habits [15], as well as increased parental care [17]. This time period between the last day of school in spring and the return in fall offers an optimal opportunity to encourage physical activity in the lives of school-aged children. Weaver and colleagues [18] analyzed the current literature regarding summer weight gain and concluded that while health professionals have been working to implement obesity interventions for youth populations, but the majority of programs are centered on the months during the school year. These programs fail to consider the summer holiday and may end up placing children at additional risk for weight gain and loss of fitness over the summer school holiday due to this shift in routine.

Structured Day Hypothesis

Brazendale and colleagues [19] proposed that the primary reason children gain excess weight and loss of fitness during the summer aligns with the Structured Days Hypothesis. This hypothesis asserts that a planned, segmented, and supervised environment can not only protect

against negative health behaviors, but could translate into lower incidence of negative health outcomes later in life [18]. This hypothesis builds on the “filled-time perspective” which proposes that filling time with positive activities does not allow for that time to be filled with negative activities [20]. In an analysis of 190 studies comparing frequency of obesogenic behavior during the school week versus weekends, 80% of studies showed that obesogenic behaviors were lower on the structured weekdays [21]. Based on these findings, summer camp may offer necessary structure and fill time during the summer break leading to overall lowering of obesogenic behaviors in the youth population.

Summer Camp

Summer camps may present an ideal setting for a physical activity intervention because camps can offer similar structural benefits of school but in a relaxing, fun environment that is engaging to the campers. Summer camp can also facilitate interactive games and positive peer interactions, which can increase children’s willingness to participate in organized activity [22]. Georgia 4-H Youth Development club creates a unique summer camp experience aimed at providing Georgia children an opportunity for adventure, education, and fun during summer break [23]. Georgia 4-H Camp Rock Eagle seeks to empower children by offering hands-on training in agriculture, leadership, communication, foods and nutrition, health, conservation, and citizenship [23]. At camp, these school-aged children learn social and life skills all while engaging in many activities that require getting up and being active. 4-H Camp Rock Eagle may serve as an example of a summer camp that can facilitate engaging games and positive peer interactions, which can increase children’s willingness to participate in organized activity [22].

Although the games and activities have been tailored to the campers’ ages and interests, there are still several campers who choose to sit out during these organized activities. The

organized games at camp have the potential to increase physical activity levels, but there still appear to be several barriers that stand in the way of children engaging in adequate levels of activity [24]. Although camp does have the potential to engage children in physical activity during the summer, this setting also includes barriers to physical activity such as temperature and equipment [22]. By seeking to understand children's experience with activity, we may be able to identify previously unexposed barriers to living an active lifestyle. These barriers may assist in building our understanding of how children develop obesity and habits of inactivity that perpetuate weight gain later in life. These findings could offer implications for how the summer camp setting can better create a positive atmosphere that fosters participation of school-aged children. The following sections review previous studies with similar methodology, structure, or population that informed the current study.

Pawlowski and colleagues [25] conducted a study to understand children's perspective on participating in recess activity (N = 16, children were interviewed and shared perceptions of recess activity). The team used a socio-ecological approach to analyze the "lived experiences" of the 8 most active and 8 least active children aged 11-12 during recess at a public school [25]. Photo interviews and participant observations were used to group participants based on activity and investigate their experience in the following categories: space, body, time, and relations. Findings indicated the most popular influences on activity levels as perceived safety, location, facilities, body dissatisfaction, bodily complaints, tiredness, boredom, and influence of peers [25]. The current study uses a similar qualitative design to explore campers' experiences during organized recreation and will use similar categories to develop the semi-structured interviews and analyze for emerging themes.

Coleman and colleagues [26] investigated limiting and enabling factors to preschoolers' inactivity at playgrounds by interviewing school's educators and managers (N = 16, interviews helped shape understanding of barriers to preschoolers' physical inactivity and identified possible areas of improvement. Coleman's research focused on younger children, but its methodology informed the current study's design to cater to children and campers. The current study follows this design closely in using a semi-structured interview style, voice recording, and different open and closed questions. This style directs children through the topic while still allowing for individual variation and interpretation.

Hesketh and colleagues [27] conducted a systematic review analyzing various barriers and facilitators to young children's physical activity and sedentary behavior. The review analyzed 43 qualitative papers using thematic analysis rooted in the social-ecological model and revealed the most common themes as the child, home, childcare, environment, safety, and weather. Papers contained similar, emergent themes, but due to the young population, findings were largely drawn from caregiver perspectives. The variables presented in this study follow closely with those in the current study. However, previous research has not investigated barriers and facilitators to physical activity in older children as thoroughly as in younger children. This study minimizes bias by collecting findings directly from the population of interest and within an age not frequently studied.

Conclusion

Although childhood obesity continues to pervade our society, increasing children's levels of physical activity are promising to help prevent it. The majority of physical activity studies and interventions have been conducted during the school year and ignore the summer school break. This vulnerable time period leaves children's days unstructured and makes space for negative

health behaviors and low physical activity. Summer camps such as 4-H Camp Rock Eagle seek to fill this void by providing a fun, active learning environment for children ages 10-13. Despite the camp's best efforts, children still choose not to participate in organized physical activity. This pilot study aims to evaluate if previously documented barriers in school children such as the individual, environment, home, and peers can also be applied to summer campers and to determine areas for future research. This study also aims to supplement existing literature within the population of school age children and also hopes to uncover barriers and facilitators specific to the Georgia 4-H camp setting that may be modifiable in the future.

CHAPTER 3
BARRIERS AND FACILITATORS TO ORGANIZED PHYSICAL ACTIVITY IN SUMMER
CAMPER¹

¹ Merideth, Jordan and S.Q. Giraudo. To be submitted to *Health Education and Behavior*.

Abstract

Previous research has sought to uncover various behavior factors that contribute to childhood activity, but have primarily relied on quantitative methods or within the context of schools. This prior research has failed to investigate childhood activity over the summer school holiday, where children may be at an increased risk for weight gain. This pilot study sought to identify and understand barriers and facilitators to organized physical activity in summer campers using their own narratives. The findings supported previously documented barriers such as perceived safety, peer influence, and environment as well as uncovering new barriers such as gender dynamics, bullying, and family participation in physical activity. Based on these findings, camp may increase activity through restructuring the schedule, modifying activities, and reinforcing leader trainings. Future studies need to assess the generalizability of these findings to other 4-H camps and summer camps across the nation.

Introduction

Obesity is impacting all populations across the United States and is now threatening the health of the country's children. The south has the highest prevalence of obesity of any region in the country at 32% [28] and the state of Georgia ranks even higher at a rate of 35% [1]. Physical activity in children can decrease fat mass, improve body composition, and lower waist circumference [2]. Activity levels tend to decline as children get older, so it is especially important to intervene early and establish healthy habits in the Georgian youth [4]. Due to the often unstructured nature of the summer school holiday, children's BMI increases at a much faster rate during the summer than during the school year [15]. This result is especially pronounced in African American, Hispanic, or children that are already overweight, suggesting that the home environment may contribute to excess weight gain [15]. This vulnerable time

period offers both a challenge to resist this upward trend in weight gain as well as an opportunity for an intervention since most children are out of school. Summer camp provides a structured alternative that can facilitate engaging games and positive peer interactions, which can increase children's willingness to participate in organized activity [22]. This pilot study was conducted at 4-H Youth Development Camp, which offers a unique summer camp experience aimed at providing children an opportunity for adventure, education, and fun during summer break [23]. 4-H Camps seek to offer a comfortable learning environment while teaching campers leadership, nutrition, conservation, and physical activity skills through hands-on games and activities [23]. This camp offered a wide sampling of children throughout the state with a variety of socio-demographic backgrounds. There is minimal research with children investigating these possible barriers to physical activity in the camp setting, particularly as it relates to their individual narrative. This understanding will help communities and camps to properly format interventions to comprehensively address the problems faced by youth.

Methods

This research used semi-structured interviews, surveys, and observations to explore camper's experience with organized physical activity. Data was collected over four of the six weeks at a Georgia 4-H Camp Rock Eagle during the summer session in 2017. All methods and procedures were approved by The University of Georgia Institutional Review Board prior to the start of the study. Participants were recruited through random sampling after prior, written parental consent. Descriptive observations were used to inform the interview and survey questions. Interviews were conducted with campers disengaged with the main activity and discussed overall camp experience, familial activities, and previous activity habits. Interviews followed a semi-structured format, lasted approximately 20-30 minutes, were audio recorded,

and transcribed verbatim. Exclusion criterion included campers with physical disabilities or injuries preventing them from engaging in organized activity.

A qualitative survey was used to identify activity trends among the larger majority of campers. Cabins were randomly selected to participate in a short questionnaire that mirrored the topics of the semi-structured interviews. Surveys were administered on the final day of camp and included open-ended questions to which campers responded in writing. Interview and survey analysis followed the constant comparative method and emerging trends were documented as findings.

Results

A total of 112 campers ages 9-13 participated in the study (interviews: n=8, 75% female; survey n=104, 62% female). Emergent findings from interview and survey data was separated into the following categories: physical factors, personal interaction, and familial experience. Physical factors appeared to primarily serve as a barrier to physical activity as a selection of interview participants did not participate due to improper attire, climate, or fear of injury. Personal interaction among campers also served as a barrier to participation as an individual's personality or bullying from other campers would diminish their desire to engage. Surveys mirrored this response, as "bad sportsmanship" was the most commonly (23%) recorded barrier to participation. Gender dynamics were referenced as both a facilitator and barrier to activity in interviews. A portion of campers noted co-ed games as "more fun" while others mentioned they preferred playing only with their own gender. Interaction may also serve as a facilitator to activity as 39.8% of survey respondents noted that the people playing the game make it enjoyable and interview participants echoed the importance of peers in their daily lives and activity outside of camp. Typical family life also emerged as both a facilitator and barrier to

participation. Some interview participants remarked of parents being “too busy” to participate in activities with them or engaging in sedentary behaviors after work and on weekends, such as watching television or “nothing”. On the other hand, some participants noted investing time in shared family interests that encourage activity, such as playing sports or swimming.

Discussion

This study uncovered and analyzed factors influencing organized physical activity and future research should aim to validate and expound upon these themes. These findings reinforced similar themes previously identified such as perceived safety, peers, and environment [25] and presented new ideas such as the influence of bullies, gender dynamics, and family participation in physical activity. These findings identify modifiable factors the camp may address to increase participation in physical activity such as restructuring the schedule to allow campers to change into activity-appropriate clothing and offering alternative activities for campers who prefer smaller groups or are sensitive to the sun. The camp may also provide reinforced leader training in surveillance, injury prevention, and intervention in negative peer interaction. The camp may also utilize the known facilitator of friends and positive peer interactions by incorporating activities designed to familiarize campers with one another. The sample was limited by parental consent, access to summer camp, and the selection of counties attending Camp Rock Eagle. Data collection was influenced by participants’ comprehension of questions and handwriting on some surveys. The random selection of survey participants represents a limited number of races, ethnicities, and socioeconomic statuses, but effectively represents the distribution common at this camp. These findings do not consider the effect of sociodemographic factors, which may limit physical activity in the home [29]; however, this study does offer suggestions to modifiable

risks in the camp setting. Future research should be done to determine the consistency of these findings with other 4-H camps or summer camping programs across the nation.

Previous research has identified general barriers to physical but has primarily investigated habits of younger children or at schools. These studies are often quantitative and do not consider the summer school holiday. This study used an innovative design that offers the rich, narrative data from qualitative research alongside the larger data set often characteristic of quantitative surveys. The qualitative methods were triangulated using results from observations, interviews, and surveys to give a voice to multiple sources. This allowed the participants the autonomy to formulate personalized thoughts and ideas and aimed for understanding as opposed to simply classifying. This study built upon previous quantitative research by uncovering additional barriers to organized physical activity among campers and identifying areas for facility improvement.

Future research areas include investigating similar physical activity factors on other camp properties to determine the generalizability of the current findings. Other potential areas for investigation include determining best physical activity intervention practices, conducting a program evaluation of counselor and adult leader training, and eventually designing widely accessible intervention programs to increase summer physical activity behaviors within the home.

CHAPTER 4

SUMMARY AND CONCLUSION

The purpose of this study was to identify and understand barriers and facilitators to camper's participation in organized physical activity through the use of their own narratives. This research identifies common themes among campers and examines how their home lives and the camp setting interact to influence behavior. The study used a narrative inquiry approach through observations, interviews, and open-ended surveys collected over the summer camping season at 4-H Youth Development Camp Rock Eagle. This study included 8 interview participants (**Table 1**) and 104 survey participants (**Table 2**) ages 9-13 years and was conducted during the regular camp season at Camp Rock Eagle. Verbatim transcripts were analyzed line by line through the constant comparative method and interview participants were assigned pseudonyms. Emergent interview findings are summarized in **Figure 2** and presented below with survey findings divided into the following categories: physical factors, personal interaction, and familial experience.

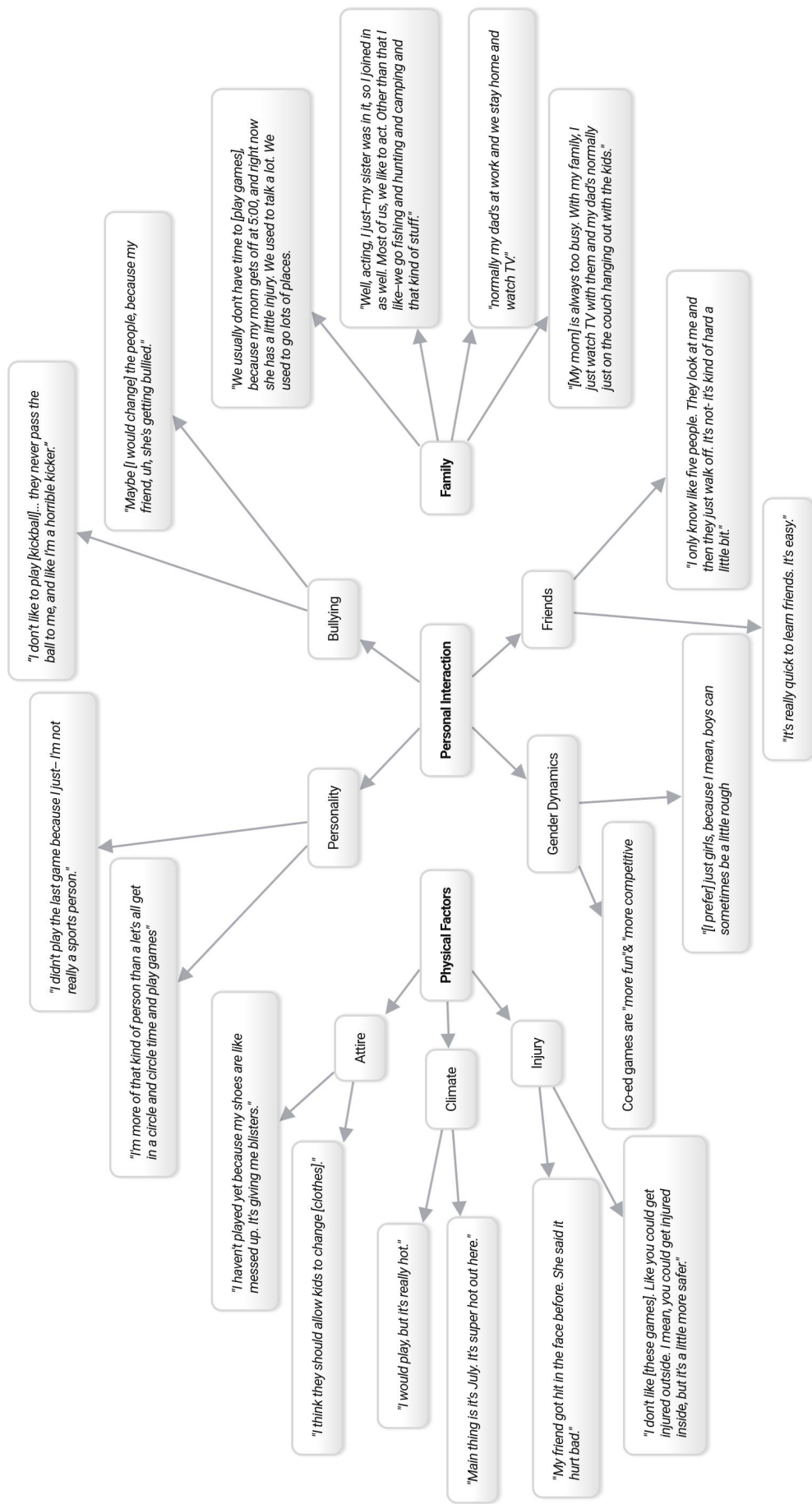
Table 1. Characteristics of Interview Participants

Characteristic	Interview N	Percentage %
Total	8	
Sex		
Male	2	25
Female	6	75
Age		
9	1	12.5
10	2	25
11	5	62.5
Race/Ethnicity		
Black or African American	1	12.5
White	7	87.5

Table 2. Characteristics of Survey Participants

Characteristic	Survey N	Percentage %
Total	104	
Sex		
Male	39	37.5
Female	65	62.5
Age		
10	19	18.28
11	44	42.31
12	35	33.65
13	6	5.77
Race/Ethnicity		
Black or African American	8	8
Hispanic	7	7
White	83	80
Other	6	6

Figure 2. Thematic Map of Interview Findings



Physical Factors

Attire

Observation and interviews documented multiple campers wearing sandals, water shoes, or other footwear unsuitable for outdoor activities such as kickball or capture the flag. In an interview, Gloria stated, “I haven’t played yet because my shoes are like messed up.” Other campers mentioned their least favorite part about camp as being unable to change clothes in between activities. Due to keeping a strict daily schedule, campers do not have time or availability to alter their attire, resulting in inappropriate activity attire, and restriction of their physical activity. Based on these findings, it appears there is potential for higher rates of participation if the camp schedule allowed campers to change clothes between activities to allow them to properly prepare for activities such as water games versus more traditional games such as kickball and capture the flag. Similarly, if not already implemented, registration paperwork should inform guardians of proper attire to facilitate participation in a variety of camp activities throughout the day.

Climate

Campers most commonly attributed their inactivity to the weather, which was mentioned 22 times in interviews alone and was fifth most commonly listed least favorite part about camp. Throughout the duration of the study, campers experienced temperatures of 80-95 degrees Fahrenheit. Seven out of eight interview participants related their inactivity to the weather to some considerable magnitude. Steffi and Gloria both commented on enjoying the chosen activity, kickball, but desiring to play indoors to avoid the heat. Nancy even claimed that there was “nothing else” that made her not want to participate in the activity aside from the heat. Heat and weather may seem like an obvious excuse for not participating in organized physical

activity, but should be taken very seriously in the camp setting due to the potential for serious conditions as heat stroke. Whether or not this is the sole barrier to activity, special attention should be paid to modify activities to foster a safe and comfortable environment for campers to interact and play.

Injury

Multiple participants referenced a risk of injury in participating the organized recreation game. Frequently coupled with mention of the weather was discussion of the amount of walking involved with camp. Tyler, Mark, and Marie claimed to struggle with how much walking the camp activities demanded of them. This walking was mentioned in the context of why they were not participating, with Tyler stating that he did not like “All the walking. I think we should have golf carts. It’s like some kids they may have asthma and that could cause health issues for those. That’s what I was really worried about.” He also stated that the amount of walking at camp was much more than he was used to and may represent a similar case as the other challenged campers. Other physical complaints recognized as barriers to interview participants included blisters, being tired from another camp, and hair turning green from pool chlorine. Multiple participants acknowledged their fear of injury in participating in physical activity due to either a personal experience or a friend’s injury. Steffi shared she was hesitant to play kickball because her friend had sustained a nose fracture playing the game and physical pain was the third most frequent survey reason campers would not want to participate in an activity. Tyler echoed these fears and suggested a solution by saying “I think they should have two groups for the kids that really don’t want to go outside because you don’t really want to force kids outside. And so like me, sometimes I can’t play because I have frequent nosebleeds.” Molly stated that a game is fun to play when you “know that you ain’t gonna get injured or something like that. I used to always

sit out when they came back on [in school] for the same reasons, like you could get injured outside. I mean you can get injured inside but it's just a little more safer." Campers appear to be scared to become injured either because of known health complications or knowing someone close to them to has suffered from participating in physical activity. This emergent finding has not been previously considered but may stand as a significant barrier to activity. Camp may be able to address this fear through promotion of proper attire, being careful to enforce the rules, and training counselors to handle injuries appropriately. Some injuries are still expected to occur, but campers' anxieties may be eased and participation increased if there is a strategic plan in place or if there are alternative, lower risk activities that can facilitate campers with injuries, health conditions, or disabilities.

Personal Interaction

Personality

Three campers identified their personality as both a facilitator and barrier to activity in interviews. Nancy mentioned that she is "not one of those people who is like makeup and the next fashion trend", indicating that she would have no problem participating in a game if it were to involve getting dirty. Another camper, Nadine, referenced her personality as more of a barrier to activity in that she is "more of [a classroom type] person, than a let's all get in a circle and circle time and play games." She continued to state, "I'd rather do something that's more just one person or two people or a small group kind of thing..." Marie echoed a similar categorization in stating "I am not really a sports person." It appears a collection of campers regard their personality and habits as a reason for not participating in the group activity. These accounts demonstrate camper's personal reflection and identification of physical activity being for a certain "type" of person. This self-reflection can be beneficial to children, but may present a

barrier to physical activity if they believe that participating in these activities is only for a specific type of person. This barrier can be addressed both at home and at camp through affirmation and encouragement. There needs to be a societal shift to regarding activity as appropriate for all types of people and providing enough variation in organized activity to suit all interests and personality types.

Bullying

Among the surveys, bad sportsmanship was written in by 23% of respondents, which was the most frequent barrier to organized physical activity among participants (**Figure 3**). Similarly, another 6% of participants simply listed “people” as the reason for not participating (**Figure 3**). During observation, a camper quit playing and joined a group of girls outside of the field of play because another player had called her a name. Interview participants also echoed their frustration in interacting with other campers through their comments. Steffi remarked: “I don’t like to play [kickball], because whenever I’m on second base and like the person on first base is trying to come, they never pass the ball to me, and like I’m a horrible kicker.” Whether she deemed herself a “horrible kicker” or she internalized someone else’s view of her, she believed that she was not worthy of continuing to play and allowed this perception to dictate her future participation. When Gloria was asked what she would change about camp, she stated “maybe the people, because my friend, uh, she’s been getting bullied.” Camp bullying was explained to take the form of bad sportsmanship comments, to cheating in games, to criticizing outfit choices. Nancy summarized the frustration when listing things that would prevent her from participating in an activity in stating “I mean, the kids, there’s nothing you can change about them” before she explained a particular cheating incident. Many of these incidents took place within earshot of counselors and adult leaders, so it is possible that these adult bystanders are in a position to

intervene but my not feel comfortable or equipped to take action despite this mandate given by the camp. However, their intervention and modeling may aide in lowering the incidence of bullying and help alleviate this barrier to activity. Prior to camp, counselor and leader trainings should reinforce how to properly handle these situations and encourage activity among a variety of campers. As evidenced by interviews, bullying not only interferes with activity at the time of the incident, but can also be internalized, carried into the future, and prevent future participation in activities.

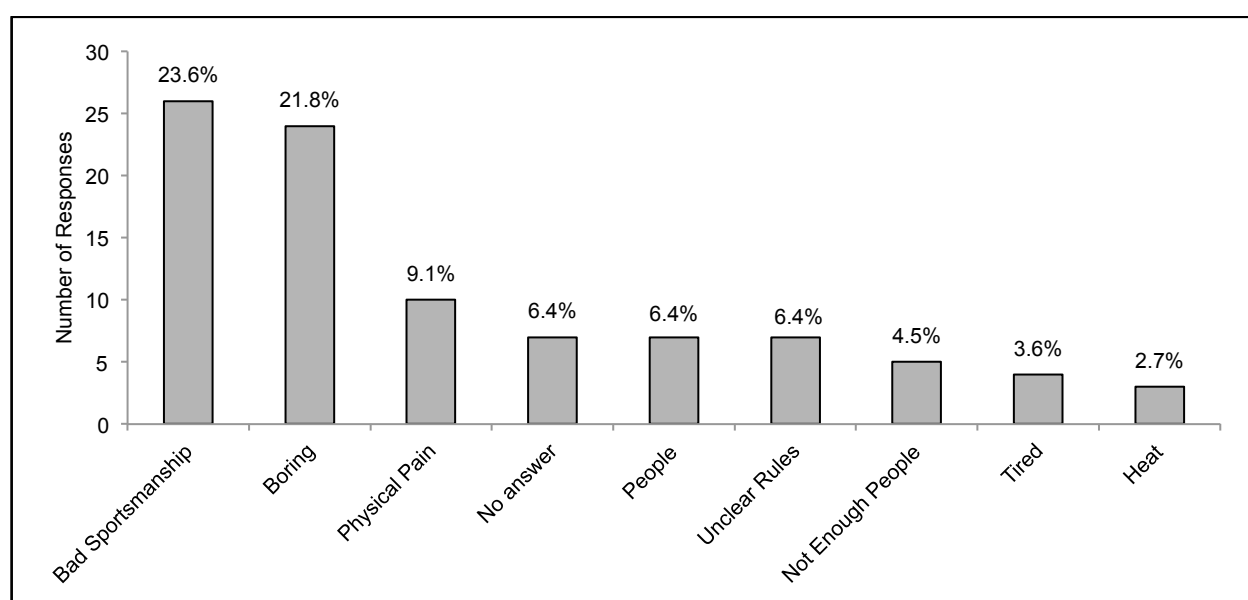


Figure 3. Top 9 Survey Responses to “What makes you not want to play a game?”.

Gender dynamics

An added complexity to the facilitators and barriers of interaction lies in gender dynamics among campers. Although Nancy, Molly, Nadine, Mark, and Marie acknowledged a difference in dynamics when participating in an activity with a mixture of boys and girls, only Molly and Marie mentioned they would be more likely to play a game if it was composed of all girls. Nancy, Nadine, and Mark remarked that activities with boys are “more fun”, “more

competitive”, and may result in “some people feel[ing] more dependent to be a leader”, respectively. The variety among these responses may demonstrate that gender can serve as both a facilitator and barrier to organized physical activity, depending on the participant. Offering alternative activities to the main, co-ed group activity may help to promote physical activity participation in populations more sensitive to these gender dynamics.

Friends

Although Tyler, Mark, and Molly commented on how easy it is to make friends at camp, Gloria mentioned that “it has been a little bit hard because they look at me and then they just walk off... it’s kind of hard for me to walk up and be like what’s up guys?” Among the survey responses, campers mirrored the most popular barrier response in explaining what would make a game fun to them. A selection of participants (39.8%) wrote in answers that can be compiled into the main category of “People” and broken into three subcategories (in descending order of popularity: Friends, Players, and Team (**Figure 4**)). Each of these categories may overlap, but it is important to maintain campers’ distinction between “friends” and “teammates” due to the nature of their interactions. While a friend may be a confidant, a teammate may simply be an individual that the person feels comfortable only within the confines of a particular situation, such as a game of kickball. Survey participants noted an increased enjoyment in games that allow them to work as a team, without arguing or bad sportsmanship. Interview participants each reflected the importance of friends in their lives by including them in the recall of their daily activities either at camp or at home. Based on these findings, the bonds of friendship may offer a substantial facilitator to promoting physical activity among summer campers. In this study, both interview and survey participants regarded friends as the most common facilitator to activity and negative peer interaction as the most common barrier. The research suggests that this camp may pay

special attention to the construction of friendships and model appropriate sportsmanship in an effort to minimize barriers and promote facilitators to physical activity.

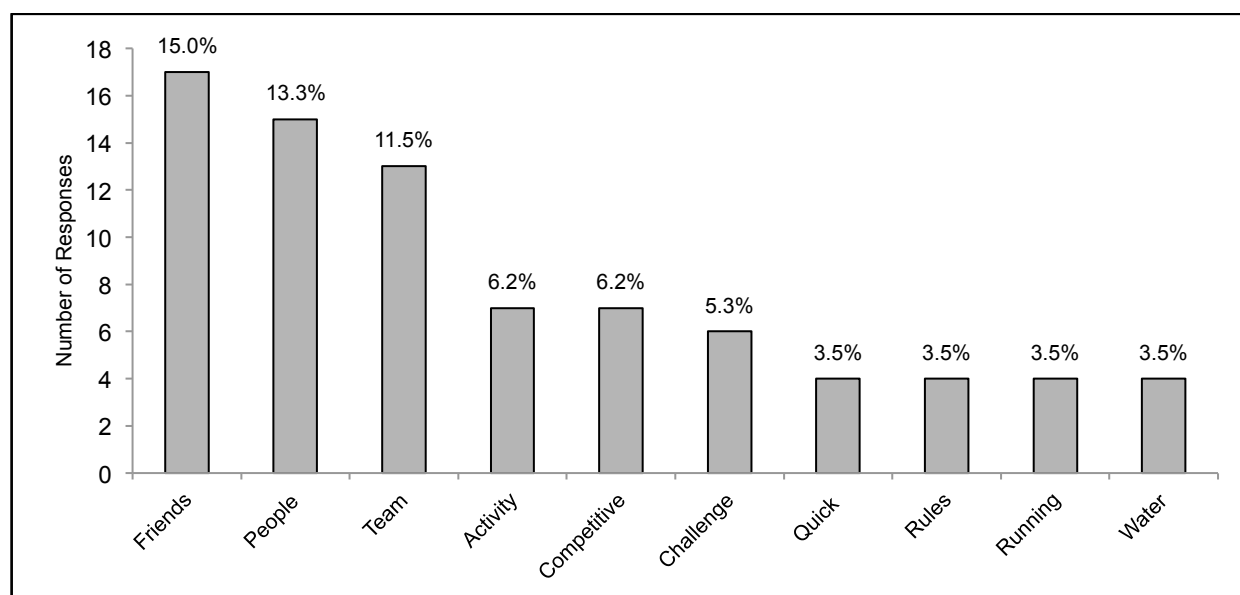


Figure 4. Top 10 Survey Responses to “What makes a game fun?”.

Familial Experience

While all interview participants were able to identify some form of physical activity they enjoyed, Tyler, Molly, and Marie said their parents would not take part in these activities with them. Among campers whose parents participated in activity with them, the activities were most often required planning and preparation such as camping, hunting, and kayaking trips. These activities did not appear frequent enough to model daily physical activity patterns to the campers. A majority of interview participants included watching television or videos as they described their typical home habits outside school. Multiple interview participants mentioned activities that interested them such as gymnastics and skating and said they wished they could go more often. The survey results indicated “television” and “relaxing” were listed three times more frequently than playing sports. Although the most popular results favor sedentary behaviors, including the

wide variety of answers reflected that over half the responses alluded to some level of physical activity. The frequent allusion to parents being “too busy” among interview participants contrasted with the more frequently active survey participants may indicate that parental participation may serve as both a facilitator and possible barrier to physical activity. Not all parents may be able to make time to participate in physical activity with their children, but small steps in modeling an active lifestyle and finding time to be active may have more of an impact on their children than previously understood. These findings indicate that children this age do not have trouble finding activities they are interested in, but their access to participating may be limited by their parents’ inability to reinforce the behavior.

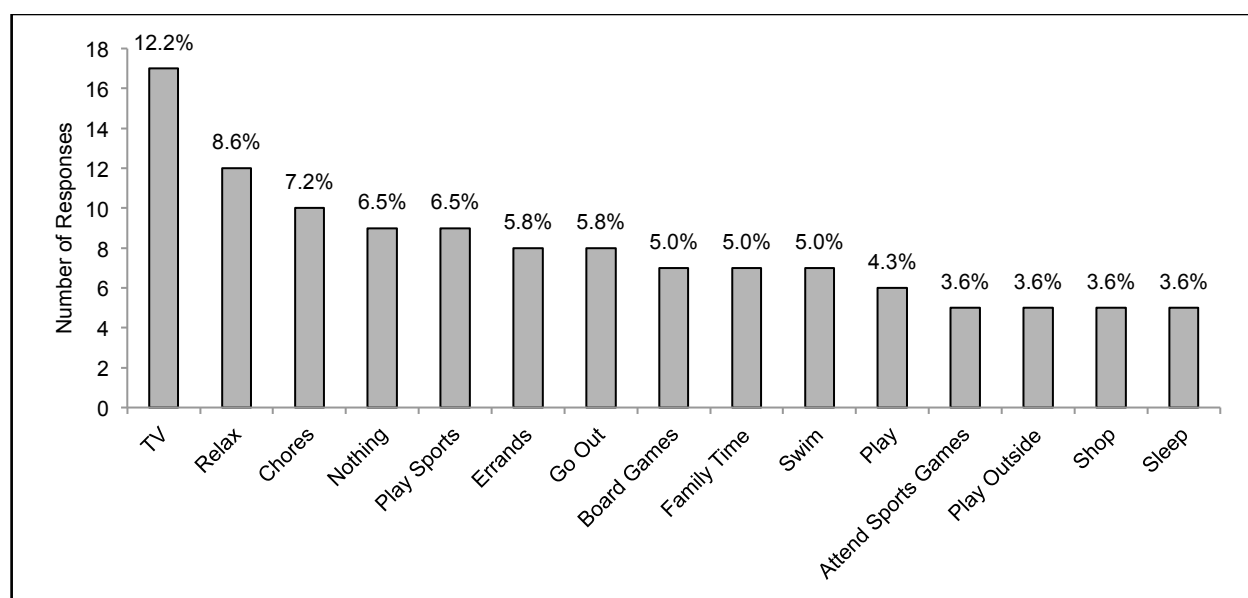


Figure 5. Top 15 Survey Responses to “What would you family do on a typical Saturday at home?”.

Discussion

Limitations

Although this study uncovered preciously unconsidered barriers and facilitators to physical activity, it is not without limitations. The sample pool was limited to children whose parents were willing to give consent, ability to afford summer camp, and the selection of Georgian counties assigned to attend Camp Rock Eagle. Data collection methods were limited by participants' understanding of the questions, willingness to share, age of participants, unique personalities, interviewer's ability to establish rapport, and interpretation of handwriting on some surveys. Cabins were randomly selected to receive surveys but this selection only represents a limited number of races, ethnicities, and socioeconomic statuses. This study investigated several factors that influence physical activity, but Camp Rock Eagle cannot easily address all factors. While summer camp may have a considerable influence over a number of modifiable risks, these do not consider the effect of sociodemographic factors, which may play a large role in limiting physical activity at home [29]. Due to these limitations, data may not be accurately generalized beyond Camp Rock Eagle to other camps or summer programs.

Strengths

Previous research has identified barriers to physical activity in children, but has primarily focused on younger children or within the context of school. These studies fail to consider the summer holiday and often rely largely on quantitative methods. This study address this knowledge gap through an innovative design that combines the depth, flexibility, and unique approach of qualitative research methods with the large data set that often characterizes observation and survey practices. The qualitative methods used in this study gave the participants the autonomy to formulate their own thoughts and ideas and sought to understand as opposed to

simply classifying. It also maintained strong internal validity to ensure the research findings are consistent with reality by giving a voice to multiple sources through method triangulation using results from observations, interviews, and surveys [30].

Summary and Future Directions

This preliminary study aimed to identify and understand facilitators and barriers to organized physical activity using a narrative inquiry approach. This study succeeded at uncovering unidentified factors influencing organized physical activity and future research should aim to reinforce and expound upon these themes. These findings validated similar themes previously identified such as perceived safety, peers, and environment [25] as well as presenting new ideas such as the influence of bullies, gender dynamics, and family participation in physical activity. Based on these findings, there are a number of modifiable factors Camp Rock Eagle may address to increase participation in physical activity. Suggestions include restructuring the schedule to allow campers to change into proper attire, offering alternative activities for campers who prefer smaller groups or do not want to play in the sun, and reinforced leader training in surveillance, injury prevention and intervention in negative peer interaction. The camp may also reinforce the known facilitator of friends and positive peer interactions by incorporating activities aimed at familiarizing campers with one another. Before attempting to extrapolate these findings to other 4-H Camps, more research should be conducted at Rock Eagle and other individual camps to determine best practices and trends. Future research topics include conducting similar studies on other camp properties to see if findings can be reproduced and generalized to other facilities, determining best practices to address these factors and increase activity, and eventually developing intervention programs to increase summer activity within the home.

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APPENDICES

APPENDIX A: RECRUITMENT FLYER

**Health is Our Pledge!**

Be part of an important a research study

- Are you a 4-H Camper at Rock Eagle?
- Do you want 4-H Camp to help you be healthier and more active?

If you answered YES to these questions, you are eligible to participate in our physical activity research study.

The purpose of this study is to improve the health of our youth through education being more physically active. You will be asked by your camp counselor to participate in surveys or interviews during or following camp activities. There is no direct benefit to you but we will use your responses to improve the camp program.

You do not have to participate in this research and you will still have full access to all camp activities.

This study is being done by a University of Georgia graduate researcher and Dr. Silvia Giraudó, Department of Foods and Nutrition.

Please contact Dr. Giraudó at hop@fcs.uga.edu or call 706-542-4907 for more information.

APPENDIX B: PARENTAL PERMISSION FORM

Researcher's Statement:

We are asking your child to take part in a research study. Please take the time to read the following information carefully and contact us if there is anything that is not clear or if you need more information.

University of Georgia (UGA) Research Team:

Dr. Silvia Giraudo, Principal Investigator	College of Family and Consumer Sciences, Department of Foods and Nutrition	HOP@fcs.uga.edu ; 706-542-4907
Research Project Information	4-H camp research	

Purpose of the Study:

Rock Eagle 4-H Camp offers many physical activities and a healthy camp environment. The goal of 4-H camp is to improve the health of youth through education about eating the right kinds of foods and being more physically active. The purpose of our research is to find ways to motivate youth to develop healthy physical activity habits to improve their lives.

Study Procedures:

If you give us permission, your child may be observed and asked to participate in surveys or interviews during or following camp activities. Allowing us to use your child's responses, information from your child's camp registration documents, and notes from our observations is

voluntary. There is no penalty for saying “no” to this. Your child will still have full access to all camp activities if they do not take part in the research or stop taking part at any time.

Risks and Benefits:

We do not anticipate any harm to participants. While there may be no direct benefit to your child, we will use the valuable information your child can provide to improve the camp programs and find new ways to inspire children to learn more about health and develop healthy habits.

Privacy/Confidentiality:

Any research records that can be used to identify your child will be kept secure. Your child’s name will not be released or included in any presentations or publications about the research.

The project’s research records may be reviewed by the Institutional Review Board (IRB) at the University of Georgia.

Questions:

Please contact the research team identified above with any questions about the research project.

Questions or concerns about your child’s rights as a research participant should be directed to

The Chairperson, University of Georgia Institutional Review Board; telephone (706) 542-3199; email address irb@uga.edu.

Parental Permission for child to take part in Research:

I agree to allow my child to take part in the research project described above: Yes No

Your Child’s Name: _____

Your Signature: _____

Date: _____

Your Printed Name: _____

Researcher’s Signature: _____

Date: _____

APPENDIX C: ASSENT NARRATIVE

Assent narrative

You are being asked to contribute to a research study to better the 4-H camp activities at Rock Eagle for future campers. Your opinion about the activities is very important to us. If you choose not to participate in this research activity, which may include completing a survey or interviews, it will not affect your ability to participate in the camp.

APPENDIX D: INTERVIEW GUIDE

Interview Questions*Intake Survey:*

Pseudonym _____

Age _____ Gender Affiliation _____

Race/Ethnicity _____

County of residence _____

Height _____ Self-Reported Weight _____

Priority audience: 10-13 y olds

Interview Script:

Camp setting

1. Tell me what camp is like to you?
 - a. Probes: activities (like/dislike); attended camp before; expectations; etc.

Home life

2. Backing up to before summer started and you were in school: walk me through a typical day for you from the time you wake up to when you go to bed.
3. Walk me through a typical weekend day for you?
 - a. Probes: specific activities, parents activities, habits

Organized Physical activity

4. What is this game about/tell me what it's like?

- a. Probes: help me understand why you chose to sit out; played before/familiar with game; preferred interests

APPENDIX E: SURVEY GUIDE

Questionnaire

Age _____ Gender Affiliation _____

Race/Ethnicity _____

County of residence _____

First time at camp? (circle) YES or NO

Camp Setting

1. What are your favorite activities at camp?
2. What do you not like about camp?

Home Life

3. During the school year, what would you and your family do when you got home?
4. What would you and your family do on a typical Saturday at home?

Organized Physical Activity

5. What makes a game fun to you?
6. Where did you learn to play your favorite games?
7. What would make you not want to play a game?
8. If you could design a new activity for camp, what would it be like?